1. For the purposes of this story, we must assume that Mr. Geoffrey, Mr. Reamer, and Mr. Guglielmo are “Perfect Logicians.” This means they are always honest, and if something can be logically deduced, they can deduce it immediately. This also means each one knows the other two are also perfect logicians.

One day, they attend a Faculty Math Club party and participate in some interesting activities. One such activity is called the HAT GAME.

The Faculty Math Club President, Dr. Gavioli, has three red hats and two white hats. Dr. Gavioli puts blindfolds on Mr. Geoffrey, Mr. Reamer, and Mr. G and then places a hat on each of their heads. When a blindfold is removed from one of the Assistant Principals, he cannot see the hat he is wearing but he can see the hats of the other two.

Dr. Gavioli removes the blindfold from Mr. Geoffrey. Mr. Geoffrey looks at the other two APs and says, “I cannot tell what color hat I’m wearing.” (Remember, since he is a perfect logician, his statement must mean it is impossible to figure out the color of Mr. Geoffrey’s hat at this point in the story!) Then, Mr. Reamer’s blindfold is removed and he looks at Mr. Geoffrey and Mr. G and says “I cannot tell what color hat I’m wearing.” (Remember, he’s a perfect logician too! He says this even though he heard Mr. Geoffrey’s last statement, *and* he can now see the other two’s hats!)

Before Dr. Gavioli has a chance to remove the blindfold from Mr. G, Mr. G says, “I know what color hat I’m wearing.”

What color hat is Mr. G wearing?

Explain your reasoning. (No credit for just writing down the right color. One point for good problem solving efforts and technique, but no correct answer. Two points for good explanation with correct answer.) [Answer.](http://www.geocities.com/chung408/math2h/challengeAnswers.htm)